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PINE BEETLE SURVEY OF 1946

on the

WALLOWA NATIONAL FOREST

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Surveys to determine the intensity and distribution of forest insect depredations in the ponderosa pine stands within and adjacent to the Wallowa National Forest were begun in 1937 and carried on annually through 1941. Lack of funds prevented carrying on the survey in 1942. A survey was carried out during 1943, but on a reduced basis due to the shortage of manpower. A continued shortage of manpower necessitated suspension of surveys on the forest during 1944 and 1945 and hampered the 1946 program. From the beginning, the pine beetle surveys on the Wallowa have been carried on through the cooperative efforts of the Forest Service and the Bureau of Entomology and Plant Quarantine.

The 1946 survey plans called for the establishment of two additional 320-acre plots to strengthen the plot data. This proved impossible due to a shortage of manpower caused by personnel ceilings. Consequently, the 1946 survey consisted of a 100 percent cruise of all insect-caused losses on the Chico plot, Sec. 18 N½; T 3 N; R 46 E; and an extensive reconnaissance of insect conditions in all timber types on the forest. The plot was cruised on August 20 by a Forest Service crew consisting of Messrs. Fred Reiter, Donald C. Wheat, and Gould J. Hoyt (crew leader). The writer gave the crew technical supervision and carried on the extensive reconnaissance phase of the survey. This phase consisted of viewing the timber stands from roads, trails, lookouts, and other points of vantage.

Pine Beetle Situation

All losses occurring since the plot was last cruised in 1943 were marked and recorded. No attempt was made to identify the 1943-1945 loss by years, for dating the loss is very difficult once the beetles have emerged. Losses on the plot remained at a very low level during the past three years, averaging but 17 board feet per acre or .16 percent of the stand (See Table 1). The indications were that this low trend was continuing, for only one tree was found on the plot in 1946.

Table 1. Losses on the Chico Plot During the Years 1943 - 1945

PLOT DESCRIPTION							
Timbered Acreage	Pine Volume	No. of Trees	Volume BM	Volume BM	BM per Acre	Percent of Stand	Ratio to 1942
200	2,094,920	14	10,360	3,450	17	.16	.85

Losses in the ponderosa pine stands of the forest were found to be generally low. Pine beetle infestation of above normal intensity was confined to three areas. The largest of these areas was between Swamp Creek and the Crow-Joseph Creek drainage. The other two areas were southwest of Viewpoint on the Enterprise-Flora highway and west of Promise. These infestations were only slightly above normal and were not particularly aggressive. Undoubtedly these local flare-ups were influenced to some extent by current logging operations, especially in the Viewpoint and Promise centers.

From the information gained on the extensive reconnaissance, estimates were made of losses occurring in the virgin ponderosa pine stands of the forest during 1945. These losses were estimated at slightly more than two million board feet. A breakdown of these losses by areas and units is presented in Table 2. The virgin stand acreage was computed from records of cutting furnished by the Forest Service.

Other Insects

A severe epidemic of the Douglas fir beetle, Dendroctonus pseudotsugae Hopk., has been in progress during the past three years in the stands of mature Douglas fir throughout the forest. Group killings were common; some of the larger groups ranging up to 20 or more trees. The infestation was especially severe in the Chesnimnus drainage. It appears that the peak of epidemic occurred during 1945 and that the infestation is now declining.

Considerable loss also occurred in the stands of true firs during the past three years. This loss was largely caused by the fir engraver beetle, Scolytus ventralis Lec., aided by the flatheaded fir borer, Melanophila drummondi (Kirby), and the roundheaded fir borer, Tetropium abietis Fall. This infestation also appears to be on the wane.

In 1946 an outbreak of the spruce budworm, Archips fumiferana (Clem). was found to be in progress on the forest. Both white fir and Douglas fir were attacked. In many localities the mature trees were heavily defoliated and the understory completely stripped. Undoubtedly considerable mortality will occur in centers where defoliation was severe. One center of infestation was found on the southeast portion of the forest, extending some 12 or 13 miles northeast from Lick G. S. to Marr Flat. Another center was found on the northeast portion of the forest.

It extends some nine miles south of Fairchild Lookout to Thomason Meadow. Near Yandall G. S. in this latter center some 2000 acres of 30-40 year old lodgepole was also attacked and moderately defoliated.

A sample of insect injury to needles of ponderosa pine was received by this office from the Supervisor's office about June 15. This damage was identified as the work of a sawfly, an unidentified species of Neodiprion that was prevalent in the Blue Mountain region in 1946. This insect attacks the foliage of ponderosa pine reproduction. The larvae prefer the older foliage but when defoliation is severe the current season's growth is also attacked. The area from which the damaged needles were collected is a few miles south and west of Enterprise. It was visited on August 15 in company of Mr. H. S. McCormick of the Supervisor's office. There was evidence that the sawfly had been present earlier in the season but, from all indications, the infestation apparently died out before any great amount of damage occurred. Evidence of some sawfly feeding was also noted near Nesbit Butte Lookout.

A small amount of damage to the terminals and twigs of ponderosa pine reproduction and poles by Archips retiniana (Wlsm.), a race of the spruce budworm, was noted near Nesbit Butte and in several other localities on the forest. The larvae of this moth enter the needle sheath and mine out the base of the partially developed needles. The majority of the infested twigs and terminals cease to grow and many die back to the preceding year's growth. Trees which have been heavily attacked become severely deformed and stunted.

Other Phenomena

A needle-killing fungus, Elytroderma deformans (Darker) appeared on ponderosa pine on many parts of the forest early in 1946. This fungus is reported capable of killing reproduction and poles and seriously weakening mature trees. While the infection was widespread it was comparatively light, causing but little damage.

Recommendations

No conditions warranting direct control measures were found to exist on the forest during 1946.

A sharp watch should be maintained for any signs of the Douglas fir tussock moth, Hemerocampa pseudotsuga (McD), as a sizeable infestation of this destructive defoliator is in progress across the Grande Ronde River on the Umatilla Forest to the west of Troy, Oregon.

Table 2. Estimate of insect-caused ponderosa pine losses - Wallowa National Forest

Area & Unit	PINE TYPE			ESTIMATE OF 1945 LOSS			
	Virgin Acreage	Cutover Acreage	Total Acreage	No. of Trees	Volume M.B.M.	Trees per Section	B. M. Per Acre
Grande Ronde							
Powwatka	22,580	42,860	65,440	630	380	18	17
Sled Springs	23,100	72,560	95,660	576	400	16	17
Chesnimnus	97,860	1,180	99,040	1,683	1,090	11	11
Lostine	15,390	34,590	49,980	216	120	9	8
Area Total	159,130	151,190	310,320	3,105	1,990	12	12
Imnaha							
Imnaha	77,680	7,700	85,380	365	200	3	3
Snake	31,620	-	31,620	100	55	2	2
Area Total	109,300	7,700	117,000	465	255	3	2
Forest Total	268,430	158,890	427,320	3,570	2,245	8	8